

State of Illinois
Department of Transportation
Bureau of Materials and Physical Research
Springfield

POLICY MEMORANDUM

Revised: March 13, 2015

23-08.3

This Policy Memorandum supersedes number 23-08.2 dated June 6, 2014

TO: REGIONAL ENGINEERS AND HIGHWAY BUREAU CHIEFS

SUBJECT: WELDED WIRE REINFORCEMENT/BAR MAT PLANT CERTIFICATION
PROCEDURE

1.0 **SCOPE**

1.1 This procedure shall apply to all Plants that supply welded wire reinforcement/bar mat to State projects. No reinforcement may be used unless the Plant has been certified.

2.0 **PURPOSE**

2.1 To establish a procedure for certification whereby Plants will supply welded wire reinforcement/bar mat meeting test properties cited by the Bureau.

2.2 To set forth the conditions for Plant certification.

3.0 **APPLICABLE SPECIFICATIONS**

3.1 ASTM A706, "Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement" (current year issued).

3.2 AASHTO M 32 (ASTM A 82), "Steel Wire, Plain, for Concrete Reinforcement" (current year issued).

3.3 AASHTO M 54 (ASTM A 184), "Fabricated Deformed Steel Bar Mats for Concrete Reinforcement" (current year issued).

3.4 AASHTO M 55 (ASTM A 185), "Steel Welded Wire Reinforcement, Plain, for Concrete" (current year issued).

3.5 AASHTO M 221 (ASTM A 497), "Steel Welded Wire Reinforcement, Deformed for Concrete Reinforcement" (current year issued).

3.6 AASHTO M 225 (ASTM A 496), "Steel Wire, Deformed, for Concrete Reinforcement" (current year issued).

3.7 National Transportation Product Evaluation Program (NTPEP), "NTPEP Committee Work Plan for Evaluation of Reinforcing Steel Manufacturers"

3.8 Illinois Department of Transportation *Standard Specifications for Road and Bridge Construction* (current year issued).

4.0 **DEFINITIONS**

4.1 Bureau - Bureau of Materials and Physical Research, Springfield, Illinois.

4.2 Certification Tag - A metal or plastic tag attached to each bundle or roll which lists the Plant name, and the reinforcement size, date produced, and mill order number. The tag shall be attached with a metal or plastic strip seal.

4.3 Department - Illinois Department of Transportation

4.4 District - Bureau of Materials located at each Illinois Department of Transportation District.

4.5 Engineer - The Chief Engineer/Director of Highways of the Illinois Department of Transportation of the State of Illinois; or authorized representative limited by the particular duties entrusted to that person, when the State is the awarding authority.

4.6 Plant – Welded Wire Reinforcement/Bar Mat mill.

4.7 Plant Classification - A Plant under this procedure will be classified as Certified, De-Certified, or Non-Certified.

4.7.1 Certified Plant - A Plant that has met the requirements for certification and is allowed to supply reinforcement to Illinois highway projects.

4.7.2 De-Certified Plant - A Plant that has had Certified Plant status rescinded because requirements warranting certification have not been maintained. A De-Certified Plant is not allowed to supply reinforcement to Illinois highway projects.

4.7.3 Non-Certified Plant - A Plant that does not meet certification requirements or has not been checked for certification and is not qualified to supply reinforcement to Illinois highway projects.

4.8 NTPEP – National Transportation Product Evaluation Program.

4.9 REINFORCEMENT – Welded Wire and/or Bar Mat

4.10 State - State of Illinois.

5.0 **CERTIFICATION PROCEDURE**

5.1 GENERAL - Certification shall be based on the following: (a) satisfactory compliance of tests to standard specifications; (b) satisfactory comparison of test results between laboratories; (c) and the Producer must be listed as “compliant” by NTPEP. The method of certification shall consist of both the Producer and the Bureau/NTPEP testing comparable samples of reinforcement manufactured within a six (6) month period for conformance to specifications. The test results obtained by the Producer laboratory shall be compared with the Bureau/NTPEP laboratory test data. The differences in the comparison of test data from the laboratories must fall within the product limits specified.

- 5.2 Inspection Expense - The cost of inspection for plant certification will be borne by the Plant. A Plant intending to supply reinforcement material to Illinois projects shall contact the Engineer of Materials, Bureau of Materials and Physical Research, 126 East Ash Street, Springfield, Illinois 62704-4766, to arrange for the required sampling. At the Plant's option, sampling arrangements will be made through an approved private inspection agency or by a State inspector. All samples will be shipped to the laboratory at the Plant's expense and choice of shipping facilities. A producer will not be added to the "Approved/Qualified Producer List of Certified Welded Wire Reinforcement/Bar Mat" list until the inspection expenses have been paid in full.
- 5.3 Sampling and Testing Procedure - The Engineer will select samples at the Plant location. The results of tests performed by the Plant laboratory shall be forwarded to the Bureau/NTPEP laboratory. The lot of material to be sampled shall include all sizes in stock. The date and time shall be prearranged by the Bureau/NTPEP and the Plant.
- 5.3.1 Sampling Frequency - Samples shall be taken from ten (10) different runs in Plant production. Each sample shall be from a different reinforcement size when available.
- 5.3.2 Sample Size - Reinforcement Samples: At a minimum, 1 full-width sheet section from 10 separate lots spanning the sizes produced.
- Producer Samples:
8-Weld Shear (adjacent wires)
8-Longitudinal Tensile (1 per line across weld)
4- Longitudinal Bend Test and *Wt/Ft (1 per line)(*Deformed Only)
4-Transverse Tensile (adjacent wires across weld)
2-Transverse Bend Test and *Wt/Ft (adjacent wires) (*Deformed Only)
- IDOT Designated Laboratory Samples:
8-Weld Shear (adjacent wires)
8-Longitudinal Tensile (1 per line across weld)
4- Longitudinal Wt/Ft (1 per line)(Deformed Only)
4-Transverse Tensile (adjacent wires across weld)
2-Transverse Wt/Ft (adjacent wires) (Deformed Only)
*Sampling outline includes backup samples.
- 5.3.3 Sample Testing - One (1) specimen from each sample shall be tested by the Plant laboratory and the test results entered on the provided form. This form shall be signed and submitted to the Bureau/NTPEP laboratory. The other specimens shall be sent to the Bureau/NTPEP laboratory for testing.
- 5.4 Plant Responsibility - The specimens shall be cut and identified by the Plant in the presence of the Engineer, and all necessary facilities shall be made available to the Engineer to perform his assigned duties. Plant facilities, witnessing of testing, and test records shall be accessible to the Engineer or his representative at all times.

5.5 Bureau Responsibility - The Bureau/NTPEP laboratory shall test the companion specimens and determine if Certified Plant status shall be granted. The Plant will be notified in writing as to test results and Plant Classification. Copies of the updated list of Certified Plants will be distributed to all Districts.

6.0 **REQUIREMENTS FOR CERTIFICATION**

6.1 Test and Specifications - The methods of test and specification requirements shall be in accordance with the applicable specifications. For comparison between laboratories, each specimen shall have four (4) units (each incorporating a different longitudinal wire) checked in tensile for the longitudinal wires and four (4) units (each corresponding to the tensile unit test) checked in weld shear. Two transverse wire shall be checked in tensile.

6.2 Laboratory Comparison Requirements - The test results for comparable sample specimens run at each laboratory shall vary between laboratories no more than the following:

Tensile.....10 percent
Unit Weight (deformed wire only) 5 percent

6.2.1 The average test results for the same sample run at each laboratory shall vary between laboratories no more than the following:

Tensile..... 5 percent
Unit Weight (deformed wire only).....2 percent

6.2.2 Any sample failing to meet Paragraphs 6.2 or 6.2.1 may be resampled. The resampling shall consist of two (2) additional pieces of reinforcement.

6.2.3 Failure of more than 10 percent of comparable test values to agree within the above limits will constitute failure to obtain Certified Plant status. The Plant will be on Non-Certified Plant status.

6.3 Quality Requirements - No more than one (1) sample shall have any of the average test results, as determined in Paragraph 6.2.1, below the applicable specification minimums as tested at either laboratory.

6.3.1 The failure of more than one (1) unit to meet the bend test will constitute rejection.

6.3.2 Failure to meet Paragraphs 6.3 or 6.3.1 will constitute failure to obtain Certified Plant status.

7.0 **REQUIREMENTS DURING PERIOD OF CERTIFICATION**

7.1 Plant Responsibility - Reinforcement material will be accepted on the basis of certified test data. The material from each mill order shall be sampled and tested and have the test data identified with the mill order number. Each bundle of reinforcement shipped to Illinois projects must be identified by an attached Certification Tag, as indicated in Paragraph 4.2, and accompanied by a test report corresponding with the mill order.

7.1.1 Certification Statement - The Plant shall submit to the Bureau/NTPEP a certified statement that reinforcement furnished to each Illinois project conforms to the current Illinois Standard Specifications. This certification shall be signed by a responsible office of the company with authority to bind the company to contract and shall be notarized.

7.2 State Responsibility

7.2.1 Resident Engineer - The Resident Engineer shall make positive identification of the reinforcement by the attached Certification Tags, the test report, and the bill of lading or invoice. Material from a Certified Plant shall be accepted and reported to the District Materials Engineer for entry into MISTIC.

7.2.2 District - Within each year, each District shall take a minimum of six (6) random samples from materials supplied by each Certified Plant supplying material to that District and assigned to or designated for a State job. The samples shall include as many sizes as are available. The samples shall be taken from different shipments and may be taken at either the job site, the fabricator, the warehouse, or any other location approved by the Engineer. The samples shall be sent to the Bureau/NTPEP laboratory for testing.

7.2.3 Bureau - The Bureau shall be responsible for all testing and evaluation of the samples.

8.0 **EVALUATION OF RANDOM SAMPLES**

8.1 Quality Requirements - A Certified Plant may be placed on De-Certified Plant status when the test results from random samples vary below the applicable specification minimums by more than the following tolerances:

Tensile.....	5 percent
Weld Shear.....	5 percent
Unit Weight (deformed wire only).....	2 percent

8.2 Control Limits

- (a) No more than ten (10) percent of the annual random test samples may fail the applicable specification minimums within the tolerances in Paragraph 8.1.
- (b) No more than two (2) of the annual random test samples may fail the applicable specification minimums by more than the tolerances in Paragraph 8.1.
- (c) No more than one (1) random test sample may fail the bend test.

8.3 Failure to obtain NTPEP compliant status.

8.4 Failure to meet requirements of Paragraphs 8.1, 8.2 or 8.3 will place the Plant on De-Certified Plant status.

9.0 **RECERTIFICATION PROCESS / CONDITIONS OF CERTIFIED PRODUCER STATUS**

9.1.1 **PROCEDURE** - The same procedure (Sections 5.0 and 6.0) required to obtain Certified Producer status will be used to gain renewal of Certified Producer status.

9.1.2 **TRIAL PERIOD OF ONE YEAR** - Certified status for a new Producer determined under Sections 5.0 and 6.0 will be in effect for a 12-month period unless decertified under conditions of Sections 7.0 and 8.0. At that time, a second certification check to Sections 5.0 and 6.0 will be performed.

A Department representative shall accompany NTPEP on the initial one year audit/certification.

9.1.3 **TWO-YEAR CERTIFICATION** - A plant successfully meeting certification requirements for 2 consecutive annual checks will retain certified status for a 24-month period unless decertified under conditions of Sections 7.0 and 8.0. At that time, another check to Sections 5.0 and 6.0 will be made.

The two year audit/certification may be performed by NTPEP.

9.1.4 **THREE-YEAR CERTIFICATION** - A plant meeting three (3) consecutive (annual or biennial) certification checks will retain certified status for a 36-month period unless decertified under Sections 7.0 and 8.0. Thereafter, certified status will remain on a 3-year basis unless decertification occurs, and certification checks to Sections 5.0 and 6.0 will be made every 3 years.

A Department representative shall accompany NTPEP on the three year audit/certification.

9.1.5 **DECERTIFICATION STATUS** - Upon decertification, the plant will revert to a new plant status, and all variable certification periods and checks will apply. A plant decertified a second time under Sections 7.0 and 8.0 within one year of the first decertification will be on non-certified status for a minimum of one year from the date of the second decertification. After one year, a Decertified Producer may request a retest for Certified Producer status provided the producer can demonstrate proof to the Engineer that the causes for the deficiencies have been remedied.

9.2 **GAINING CERTIFICATION AFTER BEING ON NON-CERTIFIED OR DECERTIFIED PRODUCER STATUS** - A Producer on the Non-Certified Producer or Decertified Producer status may gain Certified Producer status at the next annual renewal inspection provided he meets the testing procedures required for Certified Producer status. A Non-Certified Producer or a Decertified Producer may request a retest for Certified Producer status prior to the annual renewal inspection provided he can demonstrate proof to the Engineer that causes of the deficiencies have been remedied.

10.0

REPORTING

A copy of the mill certifications and the shipping orders or invoice showing reinforcement size and job identification shall be provided to the Resident Engineer and the District Materials Engineer. The Resident Engineer shall make positive identification between the reinforcement Certification Tag and the Certified Plant list. Materials from a Certified Plant will be accepted and entered into the MISTIC report system by the District.

A handwritten signature in black ink, appearing to read 'LRML'.

Laura R. Mlacnik, P.E.
Acting Engineer of Materials
and Physical Research

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